

What is claimed is:

1. A droplet ejecting device comprising:

ejecting means for ejecting a liquid stored in a pressure chamber from
5 an ejecting nozzle by applying pressure to said pressure chamber;

droplet formation assisting means for giving, to said liquid being
ejected from said ejecting nozzle, an energy that assists droplet formation.

2. A droplet ejecting device according to Claim 1,

10 wherein said energy is optical energy.

3. A droplet ejecting device according to Claim 2,

wherein said optical energy is coherent-light energy.

15 4. A droplet ejecting device according to Claim 2,

wherein said optical energy comprises plural light beams traveling in
different directions.

5. A droplet ejecting device according to Claim 2,

20 wherein said optical energy is comprises at least two light beams
traveling in opposite directions.

6. A droplet ejecting device according to Claim 1,

25 wherein said energy is thermal energy.

7. A droplet ejecting device according to Claim 1, further comprising:

ejection timing detection means for detecting a timing at which said
liquid starts being ejected from said ejecting nozzle; and

control means for controlling said droplet formation assisting means to

assist formation of a droplet at a timing when a predetermined time period has elapsed since said timing detected by said ejecting timing detection means.

8. A droplet ejecting device according to Claim 7,

5 wherein said control means sets a longer period as said predetermined time period where a volume of liquid to be ejected is larger.

9. A droplet ejecting device according to Claim 7, further comprising:

10 light emission means for emitting light onto said liquid being ejected from said ejecting nozzle;

photoreception means facing said light emission means for receiving light emitted from said light emission means through said liquid being ejected from said ejecting nozzle,

15 wherein said ejection timing detection means detects said timing at which said liquid starts being ejected in response to a change in an intensity of light received by said photoreception means.

10. A droplet ejecting device according to Claim 9,

20 wherein said droplet formation assisting means assists formation of a droplet by emitting from said light emission means a light having larger energy than an energy of said light used for detecting said timing at which said liquid starts being ejected.

11. A droplet ejecting method comprising:

25 an ejecting step of ejecting a liquid stored in a pressure chamber from an ejecting nozzle of said pressure chamber by applying pressure to said pressure chamber; and

a droplet formation assisting step for giving, to said liquid being ejected from said ejecting nozzle, an energy that assists droplet formation.

12. A droplet ejecting method according to Claim 11,
wherein said energy is optical energy.
- 5 13. A droplet ejecting method according to Claim 12,
wherein said optical energy is coherent-light energy.
14. A droplet ejecting method according to Claim 12,
wherein said optical energy comprises plural light beams traveling in
10 different directions.
15. A droplet ejecting method according to Claim 12,
wherein said optical energy comprises at least two light beams of
traveling in opposite directions.
- 15 16. A droplet ejecting method according to Claim 11,
wherein said energy is thermal energy.
17. A droplet ejecting method according to Claim 11, further comprising:
20 an ejection timing detecting step of detecting a timing at which said
liquid starts being ejected from said ejecting nozzle,
wherein said droplet formation assisting step includes assisting
formation of a droplet at a timing when a predetermined time period has
elapsed since said timing detected in said ejecting timing detection step.
- 25 18. A droplet ejecting method according to Claim 17,
wherein, in said droplet formation assisting step, a longer period is set
as said predetermined time period where a volume of liquid to be ejected is
larger.

19. A droplet ejecting method according to Claim 17,
wherein said ejection timing detecting step includes:

emitting light from a light emission means for emitting light onto
5 liquid being ejected from said ejecting nozzle;

receiving light emitted from said light emission means by a
photoreception means that faces said light emission means through said liquid
being ejected; and

detecting said timing at which said liquid starts being ejected in
10 response to a change in an intensity of light received by said photoreception
means.

20. A droplet ejecting method according to Claim 19,

wherein said droplet formation assisting step includes assisting
15 formation of a droplet by emitting from said light emission means a light
having a larger energy than an energy of said light used for detecting said
timing at which said liquid starts being ejected.

21. A droplet ejecting method according to Claim 11,

20 wherein the method is used for patterning one of a wiring, a color filter,
a photoresist, a microlens array, an electroluminescence material, a bio-
substance, and an element included in an electronic optical device.

22. An electronic optical device comprising an element that is patterned
25 using a droplet ejecting method comprising:

an ejecting step of ejecting a liquid stored in a pressure chamber from
an ejecting nozzle of said pressure chamber by applying pressure to said
pressure chamber; and

a droplet formation assisting step for giving, to said liquid being

ejected from said ejecting nozzle, an energy that assists droplet formation.

23. An electronic optical device according to Claim 22,
wherein said energy is optical energy.

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24. An electronic optical device according to Claim 23,
wherein said optical energy is coherent-light energy.

25. An electronic optical device according to Claim 23,
10 wherein said optical energy comprises plural light beams traveling in
different directions.

26. An electronic optical device according to Claim 23,
wherein said optical energy comprises at least two light beams
15 traveling in opposite directions.

27. An electronic optical device according to Claim 22,
wherein said energy is thermal energy.

20 28. An electronic optical device according to Claim 22, wherein said
method further comprises:

an ejection timing detecting step of detecting a timing at which said
liquid starts being ejected from said ejecting nozzle,

25 wherein said droplet formation assisting step includes assisting
formation of a droplet at a timing when a predetermined time period has
elapsed since said timing detected in said ejecting timing detection step.

29. An electronic optical device according to Claim 28,
wherein, in said droplet generating assisting step, a longer period is set

as said predetermined time period where a volume of liquid to be ejected is larger.

30. An electronic optical device according to Claim 28,

5 wherein said ejection timing detecting step includes:

emitting light from a light emission means for emitting light onto liquid being ejected from said ejecting nozzle;

receiving light emitted from said light emission means by a photoreception means that faces said light emission means through said liquid
10 being ejected; and

detecting said timing at which said liquid starts being ejected in response to a change in an intensity of light received by said photoreception means.

15 31. An electronic optical device according to Claim 30,

wherein said droplet formation assisting step includes assisting formation of a droplet by emitting from said light emission means a light having a larger energy than an energy of said light used for detecting said timing at which said liquid starts being ejected.